INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.idem.IN.gov

MEMORANDUM

TO: Charles E. Schalliol
Director
Office of Management and Budget

FROM: Bruce Palin
Assistant Commissioner
Office of Land Quality

SUBJECT: Information for Cost/Benefit Analysis and Fiscal Impact for Rule # 05-181

Date submitted to OMB: January 31, 2007

Date OMB Response Required: March 1, 2007

Projected Date of Preliminary Adoption: January 16, 2007

Date of publication of first notice of rulemaking: August 1, 2005

Rule Summary

This rule will be a true "one-stop shopping" rule. It will include the new exclusion for cathode ray tubes (CRTs) under the hazardous waste rules at 40 CFR 260 et al, and include provisions and standards for e-waste processing, storage and disposal under the solid waste rules. The U.S. EPA's rule for handling and recycling of CRTs was signed on July 19, 2006. The U.S. EPA "believes strongly that if the minimum requirement specified under the regulations are not met, neither the facilities nor EPA can ensure that used CRTs are being managed in a manner protective of human health and the environment".

This rule will specify minimal requirements. The minimal requirements are a registration notice; storage requirements; operational requirements; employee training; disposal requirements, and closure requirements with a closure bond. The rule will require permitting of certain e-waste processing facilities—thermal and chemical treatment—both because of the risks involved and the general statutory permitting requirement for thermal and chemical solid waste processing facilities.

Statement of Need

Electronic waste (e-waste) handling and disposal has become a pressing nationwide environmental issue of concern. The United States generates more e-waste than any other nation, according to the United States Environmental Protection Agency (U.S. EPA). Electronic waste, or e-

waste, includes CRTs from televisions and computer monitors, the central processing units (CPUs) and other chips from PCs, hard drives, printers, circuit boards, keyboards, cellular and cordless phones, televisions, VCRs, and DVD players. E-waste can include any item that has an electric cord or a battery. E-waste is also known as WEEE, or waste from electrical and electronic equipment. In general, computer equipment is a complicated assembly of more than 1,000 materials, many of which are highly toxic, such as chlorinated and brominated substances, toxic gases, toxic metals, biologically active materials, acids, plastics and plastic additives.

Indiana has addressed white goods disposal for more than 13 years. White goods include clothes washers and dryers, refrigerators, stoves, and dishwashers. Indiana Solid Waste Management Districts must provide for the proper management and disposal of white goods as a part of their approved solid waste management plans. Generally, these items are repaired or recycled, so this background report will concentrate on electronic waste other than white goods.

The health impacts of the mixtures and material combinations in electronic products often are not known. However, there is evidence that computer recyclers have high levels of dangerous chemicals in their blood. (Sjodin, et al. "Flame Retardants Exposure—Polybrominated Diphenyl Ethers (PBDEs) in Blood from Swedish Workers." Environmental Health Perspectives. Vol. 107, Number 8, August 1999.) Experts estimate that as of 2004 there were more than 315 million obsolete computers in the U.S., many of which were destined for landfills, incinerators or hazardous waste exports. Approximately 6.3 million computers were obsolete in Indiana as of 2004. No national specific mandates exist for the collection and handling of e-waste in the United States. California, Maine, Massachusetts, and Minnesota have recognized the problem to the extent of banning CRTs from municipal solid waste landfills.

This rule will address over regulation of e-waste processing facilities by offering a registration rather than requiring a permit. The rule also includes all federal requirements for storage, handling and disposal of CRTs.

This will affect all owners and operators of facilities that store, process, or dispose of electronic waste. That is estimated to be about 6-8 businesses now with many more facilities expected in the future.

Outreach/Public Participation

An external workgroup has been established to discuss issues involved in this rulemaking. The workgroup is made up of IDEM staff and a cross-section of stakeholders representing the regulated community, universities, municipalities, consultants, and solid waste management districts. This workgroup has met on a regular basis to develop the draft rule language. From September 2005 to May 2006, the external workgroup has met nine (9) times to discuss the requirements and draft language.

Impact on State and Local Government

There will be a low impact to state and local government. It is less expensive and more efficient for state employees to handle the registering of e-waste processing facilities rather than to permit them. No fees will be charged for these registrations. The closure bond will protect the State from the expense of remediation and closure of facilities that are bankrupt or irresponsible. Local governments that collect or store electronic waste will be excluded as long as the amount collected and stored is less than 46,000 pounds.

$500,000 Impact

Is this rule anticipated to have an impact of $500,000 or more on regulated entities?

No

Evaluation of Costs & Benefits

There may be a cost of approximately $20,000 to $50,000 per acre to allow indoor storage and processing of all e-waste at a facility. There is no cost associated with sending in a registration form, but there would be a cost for obtaining a closure bond. A closure bond ranges in cost from $46-$1,500 per year. Other costs, such as record keeping, operational safety plans, employee training, and protective storage requirements, are the costs of doing business and are negligible. The costs for a facility storm water permit, as applicable, are imposed by separate environmental rules.

Do Direct and Indirect Benefits Justify Costs?

The costs are minimal as compared to the cost of remediating a contaminated site. If the site would become contaminated, the cost of soil, and groundwater remediation is, at a minimum, $400,000 to $800,000 per acre.

The US EPA estimates that the average savings under the 2006 CRT rule for a previously-regulated small quantity generator is $520 per year; for a previously-regulated large quantity generator, the average saving is $1,091 per year. (See the Cost/Economic Impact, Hazardous Waste Management System; Modification of the Hazardous Waste Program; Cathode Ray Tubes at FR vol. 71, no. 145, page 42928)

For the facilities required to obtain a solid waste processing facility permit, the cost of a full permit varies; however, to permit, construct and operate a solid waste processing facility the cost is approximately $400,000 to $750,000 for the first year. Under this rule, the processing or storage of e-waste is an activity excluded from the requirement to obtain a solid waste processing facility permit, unless the e-waste will be processed by thermal or chemical treatment.

The environmental hazard dictating the imposition of this rule is the high potential for mismanagement of electronic waste, especially CRTs. CRTs have been found to be a hazardous waste. However, the federal rule being incorporated by this rulemaking excludes CRTs from having to be treated as a hazardous waste, resulting in substantial cost savings. This rule will set standards so that all e-waste will be covered under the solid waste rules. This rule will protect against spills and contamination caused by storing and processing e-waste.

The expected benefits include the protection of the environment and human health from pollution caused by e-waste.

Alternatives

Alternative 1. Specify minimal requirements. The minimal requirements are a registration notice, some sort of pad (asphalt, concrete, plastic liner with dirt cover, etc.) or plastic cover for the waste; run-on and run-off controls, and a closure bond.

Is this alternative an incorporation of federal standards, either by reference or full text incorporation? No, but this would cover any facility under the new federal regulations for the exclusion of CRTs from being a solid waste under the hazardous waste rules if certain standards are met.

Is this alternative imposed by federal law or is there a comparable federal law? No, not specifically for e-waste.

If it is a federal requirement, is it different from federal law? It includes the federal exclusion at 40 CFR 260 et al, but is broader to include solid waste standards, too.

Alternative 2. Permit as a solid waste processing facility

Is this alternative an incorporation of federal standards, either by reference or full text incorporation? No

Is this alternative imposed by federal law or is there a comparable federal law? No

If it is a federal requirement, is it different from federal law? N/A

Alternative 3. Permit for hazardous waste storage

Is this alternative an incorporation of federal standards, either by reference or full text incorporation? Yes

Is this alternative imposed by federal law or is there a comparable federal law? Yes

If it is a federal requirement, is it different from federal law? No

If it is different, describe the differences.

Alternative 4. (Three other alternatives to be considered within the rulemaking were presented in the First Notice of Comment Period published August 1, 2005, at 28 IR 3357) List electronic waste as a universal waste.

Is this alternative an incorporation of federal standards, either by reference or full text incorporation? No, but this would cover any facility under the new federal regulations for the less restrictive management standards of cathode ray tubes (CRTs) (from being a solid waste under the hazardous waste rules if certain standards are met).

Is this alternative imposed by federal law or is there a comparable federal law? No, not specifically for e-waste.

If it is a federal requirement, is it different from federal law? This alternative would include the federal exclusion at 40 CFR 260 et al., but is broader to include all specified electronic waste as a universal waste with the accompanying standards.

Sources of Information

Daniela Klesmith, Engineering Technical Advisor, Office of Land Quality, IDEM
An informational paper on e-waste written by Lynn West, IDEM, and provided to the Solid Waste Management Board in 2005.

For additional information please contact:

Lynn West, (317) 232-3593, lwest@idem.in.gov

Attachments: Proposed Rule
Rule Fact Sheet
Informational paper on e-waste